

REMARKS

This Amendment is responsive to the Notice of Panel Decision from Pre-Appeal Brief Review mailed on August 26, 2009. Applicants filed a Notice of Appeal and Pre-Appeal Brief Request for Review on July 1, 2009 (mailed June 29, 2009). Rather than proceed with the Appeal, Applicants have filed a Request for Continued Examination together with the present Amendment.

Claims 40, 81, 84, 85, 86 and 88 are amended. Claim 89 is new. Claims 40, 41, 43-82, 84-86, 88, and 89 are pending.

As a preliminary matter, Applicants would like to thank the Examiner and the Examiner's Supervisor for the courteous and productive telephone interview held on September 16, 2009, the details of which are set forth below.

Claims 40, 41, 43-82, 84-86, and 88 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Thrash (US 5,801,914) in view of Saito (US 6,243,018).

Applicants respectfully traverse these rejections in view of the amended claims and the following comments.

Summary of September 16, 2009 Telephone Interview

On September 16, 2009, Applicants' undersigned counsel telephoned the Examiner to schedule a telephone interview to discuss the rejections of record and the outcome of the Pre-Appeal Brief Review Conference.

Applicants acknowledge receipt of the Examiner's Interview Summary, mailed on September 22, 2009, and agree with the contents thereof.

After discussion, the Examiner and Supervisor indicated that the embodiment of the invention set forth in claim 82 appeared to distinguish over the rejections of record, as the advantages provided by the structure of this embodiment were not provided by the prior art of record. As discussed with the Examiner and Supervisor, claim 82 specifies two carrier strips

wound with opposite winding directions around an extent of the supply line (e.g., Applicant's Figure 9 embodiment). Saito, used to reject this subject matter, discloses two separate sheaths with another material between the sheaths (see Saito Figure 9). In the final Office Action, in rejecting claim 82, the Examiner acknowledges that Saito does not disclose the opposite winding directions but indicates that this would be an obvious design choice (Office Action, page 9). As discussed with the Examiner and Supervisor, two carrier strips wound with opposite winding directions as set forth in claim 82 would not be an obvious design choice in view of Saito and/or Thrash. As discussed, for example, at pages 22-23 of Applicants' specification, this arrangement provides for optimal covering of the supply line (e.g., so that parallel arcs can be detected in all directions over all areas over the extent of the supply line). As discussed and agreed with the Examiner's Supervisor, such an arrangement with these advantages is not provided for by the combination of Thrash and Saito.

Amendments to independent claim 40 and the other independent claims were also discussed. No agreement was reached on acceptable amendments to the remaining independent claims. However, the Examiner indicated that the arguments presented in the prior Response that a detection of the parallel arc in Thrash, would occur, if at all, only after a delay (due to the heat resistant PTE material), may be persuasive in the event that a timing element was added to the claim, for example specifying an immediate detection of the arc or an immediate change in the detector line.

The Examiner's Supervisor indicated that amendments setting forth the nature of the mechanical action of the carrier on the detector line may also be persuasive.

The claims are amended herein along the lines discussed during the telephone interview.

Discussion of Amended Claims

Independent claims 40 and 81 are amended to clarify that at least one of the electrical and optical properties of the detector line are irreversibly changed by a parallel local arc, irrespective

of the direction of the parallel local arc (see, e.g., Applicants' specification, page 3, fourth full para.).

Independent claims 84 and 88 are amended to specify that the change in property of the detector line is immediate (see, e.g., Applicants' specification, page 2, first full para.). Claim 84 is also amended to clarify that the detector circuit detects an irreversible change of the at least one electrical property of the detector line.

Claim 85 is amended to specify that the carrier irreversibly deforms, leading to mechanical stresses which actively act on the detector line (see, e.g., Applicants' specification, page 8, fifth para.).

Claim 86 is amended to specify that the carrier exerts mechanical forces acting directly on the detector track which interrupt the detector track (see, e.g., Applicants' specification, page 8, last para.).

New claim 89 is based on prior claim 40, clarified to specify that the change in property of the detector line is immediate.

Discussion of Rejections of Claims 40 and 81

As discussed with the Examiner and Supervisor during the telephone interview, and as set forth in detail in Applicants' prior Responses and Amendments, Thrash only detects a so-called serial arc (as defined, e.g., at page 17, lines 4-9 of Applicants' specification) The limitation to serial arcs in Thrash is due to the fact that the detector line runs along the power lines so that a serial arc will heat the detector line and cause the described damage. However, the detector line of Thrash is not adapted to react in the same way to a so-called parallel arc because such a parallel arc will extend radially from the power line and can therefore be located on a side opposite to the detector line 34 so that the detector line is protected by PTC material 26 of Thrash, which will "shield" the detector line 34 from being affected by such a parallel arc, as shown for example in the marked up copy of Fig. 2 of Thrash attached to Applicants' prior Response filed on May 8, 2009.

As a result, Thrash is not able to properly detect or react to a parallel arc, and in particular cannot detect a parallel arc which radiates from the supply line in any direction. Applicants' claim 40 is amended to clarify that the arc is detected irrespective of its direction.

Accordingly, Thrash does not disclose or remotely suggest the detection of a parallel arc irrespective of the direction of the arc, as set forth in amended claims 40 and 81.

The Examiner indicated that since Saito discloses a strip like conductor that is wrapped around the power line, such a conductor in combination with Thrash would be able to detect a parallel arc in any direction. However, as previously discussed, the aim of Saito is to detect a potential change that is due to a short between the detector line and ground or a short between the detector line and the power line. Saito does not disclose or remotely suggest the concept of breaking or interrupting of the detector line due to a parallel arc which may radiate in any direction.

Applicants respectfully submit that the concept of Saito would be inoperable if the detector line was broken due to the occurrence of an arc because if the detector line breaks there is no chance to reliably detect the potential change of the detector line. Saito clearly focuses on the idea that the detector line must stay conductive in order to be able to properly detect the potential change. Thus, in Saito the detector line has to remain operable and conductive even in the event an arc occurs.

In view of the foregoing, Applicants respectfully submit that one skilled in the art would not have combined the concept of Thrash with the concept of Saito, because Saito relies on the concept that the detector line must stay conductive and shall not be disturbed by an arc. The combination of Thrash and Saito would therefore be a combination of two entirely different concepts: one concept being based on the break of the detecting line (Thrash) and the other concept being based on the maintaining the integrity of the detector line (Saito).

Discussion of Claim 82 Rejection

As discussed and agreed with the Examiner and Supervisor during the telephone interview, the invention as set forth in claim 82 provides advantages not disclosed or suggested by Thrash in combination with Saito. In particular, claim 82 specifies two carrier strips wound with opposite winding directions. It is respectfully submitted that this winding arrangement would not be an obvious design choice in view of Saito. As discussed, for example, at pages 22-23 of Applicants' specification, this arrangement provides for optimal covering of the supply line (e.g., so that arcs can be detected in all directions over all areas over the extent of the supply line). As discussed and agreed with the Examiner's Supervisor, such an arrangement with these advantages is not provided for by the combination of Thrash and Saito.

Discussion of Rejections of Claims 84, 88 and 89

Independent claims 84 and 88 are amended to specify that the change in property of the detector line is immediate. This amendment corresponds to the amendment suggested by the Examiner during the telephone interview. New claim 89 includes corresponding subject matter.

As discussed during the telephone interview, the conductors 28 and 30 of Thrash are surrounded by heat resistant PTC material 26. Thus, even if a parallel arc were to occur in Thrash in the direction of the detector line 34, such an arc would only be detected after a delay, due to the protection and shielding afforded by the PTC material 26 of Thrash.

Claim 84 is also amended to clarify that the detector circuit detects an irreversible change of the at least one electrical property of the detector line, and to delete the subject matter pertaining to the detection of a change in potential, in order to further distinguish over the references of record.

Accordingly, the combination of Thrash and Saito does not disclose or suggest the subject matter of claims 84, 88 and 89.

Discussion of Rejections of claim 85 and 86

During the telephone interview, the Examiner's supervisor suggested claim amendments that more specifically set forth the mechanical action that the carrier has on the detector line.

Claim 85 is amended to specify that the carrier irreversibly deforms, leading to mechanical stresses which actively act on the detector line.

Claim 86 is amended to specify that the carrier exerts mechanical forces directly acting on the detector track which interrupt the detector track.

In Thrash, fiber 34 is made up of stainless steel fibers wound around polyester yarn, which yarn melts before the stainless steel fibers (Thrash, Col. 4, lines 19-37). Thus, the carrier of Thrash (the yarn) does not and cannot act on the detector line (stainless steel fibers). The Examiner indicated during the telephone interview that the yarn of Thrash provided mechanical stability to the detector line, and once removed could lead to its breaking. Thus, in Thrash, once the yarn melts, the stainless steel fibers may become less stable and eventually break. However, this is not equivalent to mechanical stresses caused by the carrier which actively act on the detector line, as set forth in claim 85 and not equivalent to mechanical forces from the carrier which act directly on the detector track to interrupt it, as claimed by Applicants in claims 85 and 86, respectively.

Applicants respectfully submit that the present invention as set forth in the independent claims would not have been obvious to one skilled in the art in view of Thrash taken in combination with Saito or any of the other prior art of record.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the amended claims, the discussion during the telephone interview, and the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Withdrawal of the rejections under 35 U.S.C. § 103(a) is therefore respectfully requested.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the pending claims and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,


Douglas M. McAllister
Attorney for Applicant(s)
Registration No. 37,886
Lipsitz & McAllister, LLC
755 Main Street
Monroe, CT 06468
(203) 459-0200

ATTORNEY DOCKET NO.: HOE-767

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